

CLAIMS

1. A method for identifying a substance which modulates the activity of a pknB protein kinase, comprising:

5 contacting a recombinant bacterial cell with the substance, wherein the recombinant bacterial cell expresses the pknB protein kinase, and wherein the pknB protein kinase comprises the amino acid sequence of SEQ ID NO: 3 or an amino acid sequence that is at least 70% identical to SEQ ID NO: 3 and has protein kinase activity;

measuring the pknB protein kinase activity from said bacterial cell; and

10 comparing the pknB protein kinase activity from the recombinant bacterial cell contacted with the substance to a bacterial cell which has not been contacted with the substance, wherein a change in protein kinase activity from the recombinant bacterial cell contacted with the substance relative to a bacterial cell which has not been contacted with the substance indicates that the substance modulates the activity of pknB protein kinase.

15 2. The method of Claim 1, wherein the pknB protein kinase comprises the amino acid sequence of SEQ ID NO: 3.

20 3. The method of Claim 1, wherein the pknB protein kinase comprises an amino acid sequence that is at least 70% identical to SEQ ID NO: 3 and has protein kinase activity.

25 4. The method of Claim 3, wherein the pknB comprises an amino acid sequence that is at least 80% identical to SEQ ID NO: 3 and has protein kinase activity.

5. The method of Claim 3, wherein the pknB comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 3 and has protein kinase activity.

25 6. A method for identifying a substance which modulates the activity of a pstp2 phosphatase, comprising:

 contacting a recombinant bacterial cell with the substance, wherein the recombinant bacterial cell expresses the pstp2 phosphatase, and wherein the pstp2 phosphatase comprises the amino acid sequence of SEQ ID NO: 1 or an amino acid sequence that is at least 70% identical to SEQ ID NO: 1 and has phosphatase activity;

 measuring the pstp2 phosphatase activity from the recombinant bacterial cell; and

comparing the pstp2 phosphatase activity from the recombinant bacterial cell contacted with the substance to a bacterial cell which has not been contacted with the substance, wherein a change in phosphatase activity from the recombinant bacterial cell contacted with the substance relative to a bacterial cell which has not been contacted with the substance indicates that the substance modulates the activity of pstp2 phosphatase.

5 7. The method of Claim 6, wherein the pstp2 phosphatase comprises the amino acid sequence of SEQ ID NO: 1.

10 8. The method of Claim 6, wherein the pstp2 phosphatase comprises an amino acid sequence that is at least 70% identical to SEQ ID NO: 1 and has phosphatase activity.

15 9. The method of Claim 6, wherein the pstp2 phosphatase comprises an amino acid sequence that is at least 80% identical to SEQ ID NO: 1 and has phosphatase activity.

10. The method of Claim 6, wherein the pknB comprises an amino acid sequence that is at least 90% identical to SEQ ID NO: 1 and has phosphatase activity.

11. A method of identifying an antibacterial substance, comprising:
identifying a substance according to Claims 1 to 5;
contacting a bacterial cell with the substance; and
20 comparing the growth, the survival or both of the bacterial cell contacted with the substance to a bacterial cell that has not been contacted with the substance, wherein a reduction in the growth, survival or both of the bacterial cell is indicative that the substance is an antibacterial substance.

12. A method of identifying an antibacterial substance, comprising:
25 identifying a substance according to Claims 6 to 10; and
contacting a bacterial cell with the substance;
comparing the growth, the survival or both of the bacterial cell contacted with the substance to a bacterial cell that has not been contacted with the substance, wherein a reduction in the growth, survival or both of the bacterial cell is indicative that the substance is an antibacterial substance.

30 13. A method for the preparation of a substance having antimicrobial activity, comprising:

identifying a substance according to Claims 1 to 5; and
synthesizing the substance.

14. A method for the preparation of a substance having antimicrobial activity,
comprising:

5 identifying a substance according to Claims 6 to 10; and
synthesizing the substance.